

IN THE CLAIMS

Please amend the claims as follows.

1. (Currently Amended) An electronic device for use in assisting a hearing impaired patient having a microphone, a preamp, a signal processing stage, and an output amplifier, the electronic device comprising:

an active low pass filter responsively coupled between said signal processing stage and said output amplifier, said active low pass filter having an adjustable overshoot adapted to tunably match a measured resonance curve to provide a substantially smooth insertion gain frequency response, said active low pass filter including:

a resistor coupled to a capacitor to form a low pass filter to provide a filtered signal;

an operational amplifier to receive the filtered signal at an input of the operational amplifier;

a feedback capacitor coupled from an output of the operational amplifier to the input of the operational amplifier; and

a variable resistor to couple the low pass filter to the input of the operational amplifier, wherein said active low pass filter is adapted to provide a frequency of peak gain of the electronic device at about 1.2 kilohertz.

2. (Previously Presented) The electronic device of claim 1, wherein said output amplifier further comprises a class D amplifier.

3. (Previously Presented) The electronic device of claim 2, further comprising a buffer stage responsively coupled intermediate said active low pass filter and said output amplifier.

4. (Previously Presented) The electronic device of claim 3, wherein the measured resonance curve corresponds to a resonance curve of an outer auditory canal of a hearing impaired patient.

5. (Currently Amended) The electronic device of claim 4, wherein said ~~active low pass filter further comprises a variable resistor to provide said adjustable overshoot~~ said buffer stage is coupled to said active low pass filter by a coupling capacitor and coupling resistor connected in series.

6. (Currently Amended) ~~An apparatus~~ A hearing aid comprising:

a microphone;

a preamp and signal processing stage responsively coupled to said microphone;

an active low pass filter responsively coupled to said preamp and signal processing stage, ~~the~~ said active low pass filter having an adjustable overshoot adapted to tunably match a measured resonance curve to provide a substantially smooth insertion gain frequency response, said active low pass filter including:

a resistor coupled to a capacitor to form a low pass filter to provide a filtered signal;

an operational amplifier to receive the filtered signal at an input of the operational amplifier; and

a variable resistor to couple the low pass filter to the input of the operational amplifier such that the variable resistor controls a peak frequency of the low pass filter; and

an output amplifier responsively coupled to said active low pass filter.

7. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim 6 wherein said output amplifier further comprises a class D amplifier.

8. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim 7 wherein said active low pass filter ~~further comprises a component for adjusting the overshoot of said active low pass filter~~ is adapted to provide a frequency of peak gain of the hearing aid at about 1.2 kilohertz.

9. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim ~~[[8]]~~ 7 wherein said ~~component adjusts the peak frequency of said active low pass filter~~ output amplifier is coupled to

said active low pass filter by a buffering stage that is capacitively coupled to said active low pass filter.

10. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim 9 wherein said ~~component further comprises a variable resistor~~ said output amplifier is coupled to said buffering stage by a capacitor.

11. (Currently Amended) A method of assisting a hearing impaired patient comprising:
tuning ~~the~~ a frequency response curve of an electronic hearing aid to a measured resonance curve of said hearing impaired patient such that the electronic hearing aid provides said hearing impaired patient with a smooth insertion frequency response, wherein said tuning includes adjusting a variable resistor coupled to an operational amplifier of an active low pass filter in the electronic hearing aid, the active low pass filter configured having;
a low pass filter to provide a filtered signal;
the operational amplifier to receive the filtered signal at an input of the operational amplifier; and
the variable resistor coupling the low pass filter to the input of the operational amplifier such that the variable resistor controls a peak frequency of the low pass filter.

12. (Currently Amended) ~~A~~ The method according to claim 11 wherein said electronic hearing aid further comprises a class D output amplifier.

13. (Currently Amended) ~~A~~ The method according to claim 12 wherein said electronic ~~hearing~~ said hearing aid further comprises ~~an~~ said active low pass filter responsively coupled to said class D output amplifier.

14. (Currently Amended) ~~A~~ The method according to claim 13 wherein said tuning ~~step~~ further comprises adjusting the overshoot of said active low pass filter to provide a frequency of peak gain of the electronic hearing aid at about 1.2 kilohertz.

15. (Currently Amended) ~~A~~ The method according to claim 14 wherein said adjusting further comprises adjusting ~~a variable resistor~~ an amplification of an overshoot of said active low pass filter.

16. (Currently Amended) ~~An apparatus~~ A hearing aid comprising:

means for converting an acoustic signal into an electrical signal;

means responsively coupled to said converting means for adjustably processing said electrical signal to produce a desired frequency response, said processing means having an active low pass filter adjustable overshoot adapted to tunably match a measured resonance curve to provide a substantially smooth insertion gain frequency response, said active low pass filter including:

a low pass filter to provide a filtered signal;

an operational amplifier to receive the filtered signal at an input of the operational amplifier; and

a variable resistor to couple the low pass filter to the input of the operational amplifier such that the variable resistor controls frequency of peak gain in a frequency response of the hearing aid; and

means responsively coupled to said processing means for amplifying said processed electrical signal.

17. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim 16 wherein said amplifying means further comprises a class D amplifier.

18. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim 17 wherein said processing means ~~further comprises an active low pass filter~~ is adapted to provide a frequency of peak gain of the hearing aid at about 1.2 kilohertz.

19. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim ~~[[18]]~~ 16 wherein said ~~active low pass filter further comprises means for adjusting the overshoot~~ said amplifying means is capacitively coupled to said processing means.

20. (Currently Amended) ~~An apparatus~~ The hearing aid according to claim ~~[[19]]~~ 16 wherein ~~said adjusting means further comprises a variable resistor~~ said amplifying means is coupled to said processing means through a buffering stage.